

**Remarks:**

1. Applicant thanks Examiner for his careful review of the present application and appreciates the conditional allowance of claims 5 – 16.
2. Examiner rejected claims 1 – 4 under 35 U.S.C. § 102(b) as being anticipated by Oles (US 5,946,500) and rejected claims 17 – 20 under 35 U.S.C. § 103(a) as being rendered obvious by a combination of the Oles and Perry (US 5,971,544) references.
3. **Amendments to the Specification:** Corrections of minor typing or syntactical errors were made in paragraphs [0012], [0020], [0022], [0024], and [0033]. No new subject has been introduced with these amendments and Applicant respectfully requests approval and entry of the amended paragraphs.
4. **Amendments to the Claims:**
  - Claims 1 – 4 have been cancelled and claim 5 amended to contain the limitations of claims 1, 3, and 4.
  - Claims 6, 7, 12, and 13 were amended merely for purposes of clarity. The scope of the recitations in each claim remains unchanged.
  - Claim 11 was cancelled.
  - Claim 17 has been amended to clarify the background mask. Specifically, in step d), language has been added to more clearly recite that the background mask is “independent of color” and in step e), language added to clarify that the step of using the background mask to strip the background from said photograph is based on brightness contrast and not on color. Language supporting this amendment is found in numerous paragraphs in the Specification as filed, and particularly in the second half of paragraph 14 on page 6, paragraph 15, paragraph 39.
  - Claim 20 was amended to delete an obvious typing error.
  - Claim 21 was added to recite the device of Claim 5 as further comprising a translucent lens. Support for this claim is found in FIG. 4 where it is designated as “8”

and in paragraph [0035] on page 13 of the Specification as filed.

None of the amendments to the claims introduce new subject matter and Applicant respectfully requests approval and entry of the claims as presently submitted.

5. **Rejection under 35 U.S.C. § 102(b):** Claim 5 has been amended to include the subject matter of claim 1. Applicant respectfully submits that amended claim 5 is now in allowable condition and accordingly requests that Examiner allow claims 5 – 16.

6. **Rejection under 35 U.S.C. § 103(a):** Examiner rejected method claim 17 and its dependent claims, asserting that Oles and Perry together render the present invention obvious. Before discussing the critical differences between the disclosures and teachings of the cited prior art, a brief discussion of the state of the art is provided.

7. All prior art having to do with creating a background mask, for the purpose of stripping a background from a photographed image, is based on maximizing the contrast between a background color and the object to be photographed. Typically, a saturated blue or green color is used for the background color, which is subsequently stripped from the photograph by filtering all pixels with that particular color from the photograph. This method has several inherent disadvantages, the two primary disadvantages being that the stripping process also strips that color from the object itself, should that color also be present in the object, and that the use of the saturated color as a background often adds undesired coloration or color contamination to the object to be photographed. Thus, assuming a saturated blue is chosen as a background color, all pixels with that saturated blue color are stripped from the photograph, whether the pixels be in the background or in the foreground on the tie of the person being photographed. The blue background throws a blue hue onto the object being photographed, but that blue is different from the background color that is being filtered from the image, so this contamination is not stripped from the photograph.

8. In order to eliminate these disadvantages, the inventor of the present invention

has devised a method of creating a background mask that is based on luminance, *i.e.*, on brightness contrast, not on color. The background is distinguishable from the object by brightness contrast, not by color. A general discussion of the importance of a contrast-defined, rather than a color-defined background mask is given in paragraphs 11 – 13 of the Specification.

9. For general information, it is pointed out here, that the method of the present invention is applicable only to still photography, and is not applicable to motion pictures or television images, because at least two shots of the same object must be made – one to obtain the background mask according to the invention and at least one to obtain the color image of the object.

10. Oles discloses a chroma, *i.e.* color, replacement technique that is particularly applicable for video and digital imaging for motion pictures and television. Col. 3, lines 30 – 32. The Oles method uses by necessity a colored background. Col. 5, lines 10 – 15. The Oles method also uses a retro-reflective background sweep to obtain a precise and even illumination of the background. Examiner has perhaps interpreted the words, “even illumination of background” to be alluding to a background image that is based on luminance. This is not the case. In the Oles method, it is color that is used to define what is to be stripped from the photograph, in order to obtain a precise image of the object (or subject) without a background. The importance of the even illumination in the Oles method has to do with the ability to narrow the bandwidth of color that is stripped from the photograph, in order to minimize the chance of stripping desired color from the object or subject itself. Oles teaches: “The uniform precision of the background color results in a narrower bandwidth (frequency) of the color such that we could use a narrower filter to remove the blue screen (or any selected color) from the image with the subject. ... The ability to remove a narrower bandwidth of color allows a more specific shade of a color (or a more precise wavelength) to be removed while leaving other shades of the same color within the foreground image.” Col. 5, lines 44 – 58. Emphasis

added.

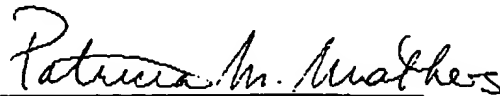
11. Oles discusses at length the necessity of having a background color that is different from the colors in the object to be photographed. Col. 6, lines 18 – 37. Clearly, Oles is stripping the background from the photograph, based on color, not on luminance or brightness contrast.

12. Applicant respectfully submits that the disclosures of Oles and Perry, either alone or in combination, do not disclose, teach, or suggest creating a background mask based on brightness contrast. Oles teaches away from the present invention, by teaching the importance of using a color that is least likely to appear in the object or subject to be photographed, and by teaching the importance of obtaining an evenly illuminated background color, so that a narrower bandwidth color filter may be used to strip the color from the photograph. These teachings are not applicable to the present invention. As disclosed in paragraph [0015] of the Specification as filed, a colorless background may be used according to the present invention and a background mask based on brightness contrast still be obtained. This is particularly important when photographing transparent objects, such as a glass of water. Accordingly, Applicant submits that claims 17 – 20 contain allowable subject matter and requests that Examiner withdraw his rejection under 35 U.S.C. § 103(a) and allow these claims.

13. Applicant has addressed each rejection raised by Examiner and submits that all the claims currently presented contain allowable subject matter. Accordingly, Applicant requests that Examiner withdraw his rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) and allow the claims currently submitted.

14. This response is being filed within the fourth month of the issue date of the Office Action. A petition for time extension and authorization to deduct the one-month late fee is attached hereto.

Respectfully submitted,



Date: October 8, 2004

Enclosed:  
Time extension petition

Patricia M. Mathers  
Attorney for Applicants  
Reg. No. 44,906  
Bohan, Mathers & Associates, LLC  
P. O. Box 17707  
Portland, ME 04112-8707  
(207) 773-3132